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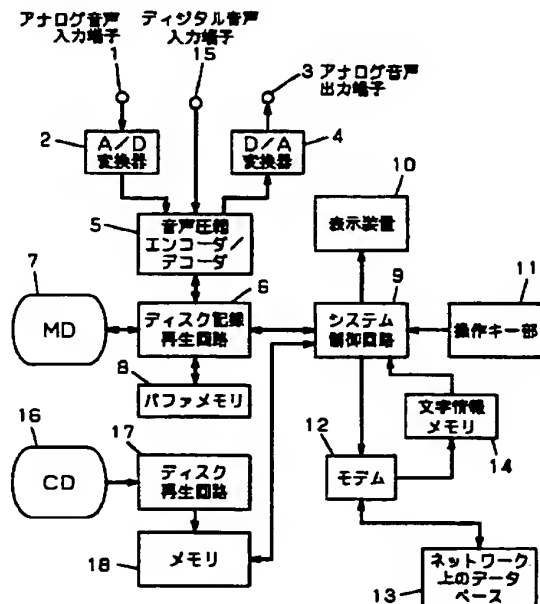
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(54) 【発明の名称】 ディスク記録再生装置

(57) 【要約】

【課題】 国際標準レコーディングコードを持つメディアから他のメディアに録音する際、記録媒体にそれぞれのトラックのタイトル文字情報を自動的に記録する。

【解決手段】 国際標準レコーディングコード (ISRC) を持つマスターディスクのCD 16 からスレーブディスクのMD 7 に録音する際、メモリ 18 に録音するトラックごとの ISRC を格納し、記録再生装置内のモデム 12 によりインターネットの ISRC に対応するタイトルデータのデータベースを持つホームページにアクセスして、メモリ 18 の ISRC に対応するタイトル文字情報をダウンロードして文字情報メモリ 14 に記憶させ、スレーブディスク MD 7 に録音したプログラムに対応するタイトル文字情報をメモリ 14 からスレーブディスクの MD 7 に記録する。



【特許請求の範囲】

【請求項1】 マスター記録媒体からプログラムデータおよび国際標準レコーディングコード（ISRC）を再生する再生手段と、

前記マスター記録媒体から再生された国際標準レコーディングコードを格納する第1のメモリと、
スレーブ記録媒体にタイトルデータと前記マスター記録媒体から再生されたプログラムデータとを記録する記録再生手段と、

外部データベースへ接続し前記国際標準レコーディングコードに対応したタイトルデータを取り込む外部データベース接続手段と、

前記外部データベース接続手段により取り込んだタイトルデータを格納する第2のメモリと、
制御手段とを備え、

前記制御手段は前記再生手段で再生した前記マスター記録媒体のプログラムデータを前記記録再生手段のスレーブ記録媒体に記録し、かつ前記マスター記録媒体に記録されている前記国際標準レコーディングコードを前記第1のメモリに格納し、前記外部データベース接続手段で接続した外部データベースから前記第1のメモリに格納してある前記国際標準レコーディングコードに対応するタイトルデータをダウンロードして前記第2のメモリに格納し、前記スレーブ記録媒体へのプログラムデータの終了後に前記第2のメモリに格納されたタイトルデータを前記スレーブ記録媒体に記録させることを特徴とする記録再生装置。

【請求項2】 スレーブ記録媒体の既収録データの状況を格納する第3のメモリをさらに備え、

制御手段は記録再生手段でスレーブ記録媒体の既収録データ状況を再生して前記第3のメモリに格納し、外部データベースからマスター記録媒体の国際標準レコーディングコードに対応してダウンロードしたタイトルデータを前記第3のメモリの内容を参照して新たに前記マスター記録媒体から記録したプログラムデータに対応させて前記スレーブ記録媒体に記録することを特徴とする請求項1記載の記録再生装置。

【請求項3】 スレーブ記録媒体へのプログラムデータとタイトルデータの記録終了後に各メモリに格納されたデータを消去することを特徴とする請求項1または2記載の記録再生装置。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明はディスク記録再生装置に関し、マスターディスク内の国際標準レコーディングコードを元にコンピュータ通信ネットワーク上に公開されている音響データのタイトルデータをディスク記録再生装置内のメモリに取り込みスレーブディスクにタイトルを自動的に記録できるものに関する。

【0002】

【従来の技術】 現在、光ディスクを用いて音楽等の記録再生を行う記録再生装置として記録媒体に光磁気ディスクを用いたミニディスク（以下MDと略称）システムが多く用いられている。このMDシステムでは、例えばデジタル化されたATRAC（登録商標）（Adaptive Transform Acoustic Coding）方式で圧縮符号化された音楽データなどからなるプログラムがディスクに記録され、記録されたプログラムの管理情報がディスクの内周側に記録されている。

【0003】 図3は、記録再生用MDの記録エリアを概略的に示す図である。ディスクのクランピングプレートエリア25を除く情報膜の領域がインフォメーションエリア19とされる。インフォメーションエリア19の最内周側をリードインエリア22といい、ここには、再生専用の膜が被着されており、予めピットの形態で情報が記録されている。リードインエリア22の外側に記録膜が被着されたレコーダブルエリア20が設けられ、さらにディスクの最外周にリードアウトエリア23が設けられる。レコーダブルエリア20には、U-TOC（User-Table Of Contents）を記録するU-TOCエリア21が配置され、プログラムエリア内に記録されている各プログラムに係る情報が記録されている。また、レコーダブルエリア20のU-TOCエリア21の外側にプログラムを記録するプログラムエリア24が配置されている。

【0004】 プログラムは、トラック単位で管理される。例えば、プログラムが音楽データである場合、1曲を1トラックとして記録することができる。再生時に希望のトラックを指定することで、そのトラックに記録された曲、すなわち音楽データが再生される。

【0005】 U-TOCエリア21は、例えば32セクタから構成され、このうちセクタ1および4は、それぞれ異なる文字形態に対応する。例えば、セクタ1がアスキーコードによって表される英字を管理し、セクタ4がISO（International Organization for Standardization）-8859-1またはJIS（Japanese Industrial Standard）による文字コードで表される漢字や平仮名などによる文字情報を管理する。それぞれのセクタには、プログラムのトラック情報と文字情報との対応付けを管理するエリアが設けられ、このエリアに、トラックに対応した文字情報のポインタが記される。

【0006】 文字情報の入力、この光磁気ディスク装置に設けられたキーまたはリモートコントロールコマンド（以下、リモコンと略称する）に設けられたキーなどを操作する手段や、図4に示すように特開平12-11604号公報に記載されたパーソナルコンピュータ（以下、パソコンと略称する）26を使って、ネットワーク上の文字情報をカット＆コピーし、そのデータを変換装置27で変換してMDオーディオ記録再生装置28に転送することによって文字情報の取り込みがなされる。

【0007】

【発明が解決しようとする課題】上述のMDに文字情報が入力される場合について考える。例えば各プログラムに記録された音楽データに関連する曲のタイトル情報が入力され、記録される。上述の場合、従来では、入力を行うデータを、プログラム情報を入力する度に選択する必要がある。より容易に行うためには、ネットワーク上のデータを操作する環境を持っている事が必要不可欠であった。また、ネットワーク上に公開されているタイトルを、例えば歌手名や曲名などのキーワードを文字入力してサーチエンジンで検索する必要がある。さらに、検索されたデータをプログラムごとにカット&コピーする必要があった。このような手間を考慮するとタイトル入力は、ユーザにとっては、かなりの面倒な事であることがわかる。

【0008】そこで、本発明では、記録再生装置内にコンピュータネットワークにアクセスできる装置を内蔵してネットワーク上にあるマスターディスクに関連するデータがあるホームページに自動的にアクセスし、スレーブの記録媒体に記録するプログラムに対応付けて、文字情報を自動的にサーチし、その文字情報をスレーブ記録媒体に記録することによって、タイトル入力を完全に自動化できる手段を提供することを目的としてなされたものである。

【0009】

【課題を解決するための手段】上記課題を解決するために本発明の記録再生装置は、請求項1において、マスター記録媒体からプログラムデータおよび国際標準レコーディングコード（ISRC）を再生する再生手段と、前記マスター記録媒体から再生された国際標準レコーディングコードを格納する第1のメモリと、スレーブ記録媒体にタイトルデータと前記マスター記録媒体から再生されたプログラムデータとを記録する記録再生手段と、外部データベースへ接続し前記国際標準レコーディングコードに対応したタイトルデータを取り込む外部データベース接続手段と、前記外部データベース接続手段により取り込んだタイトルデータを格納する第2のメモリと、制御手段とを備えた構成である。

【0010】この構成において前記制御手段は前記再生手段で再生した前記マスター記録媒体のプログラムデータを前記記録再生手段のスレーブ記録媒体に記録し、かつ前記マスター記録媒体に記録されている前記国際標準レコーディングコードを前記第1のメモリに格納し、前記外部データベース接続手段で接続した外部データベースから前記第1のメモリに格納してある前記国際標準レコーディングコードに対応するタイトルデータをダウンロードして前記第2のメモリに格納し、前記スレーブ記録媒体へのプログラムデータの終了後に前記第2のメモリに格納されたタイトルデータを前記スレーブ記録媒体に記録させるように作用し、これにより記録媒体に記録

するプログラムに関するタイトルデータを手数なく完全に自動的に入力できるものである。

【0011】また本発明の請求項2において、請求項1の構成にスレーブ記録媒体の既記録データの状況を格納する第3のメモリをさらに備えた構成とすることにより、制御手段は記録再生手段でスレーブ記録媒体の既記録データ状況を再生して前記第3のメモリに格納し、外部データベースからマスター記録媒体の国際標準レコーディングコードに対応してダウンロードしたタイトルデータを前記第3のメモリの内容を参照して新たに前記マスター記録媒体から記録したプログラムデータに対応させて前記スレーブ記録媒体に記録するように作用し、記録再生媒体にすでに記録がされている場合にも記録内容とタイトルデータとを正しく対応させることができる。

【0012】さらに本発明の請求項3において、請求項1または2の構成においてスレーブ記録媒体へのプログラムデータとタイトルデータの記録終了後に各メモリに格納されたデータを消去するようにしたことにより、記録後に不要なデータがメモリを占有することがないように作用する。

【0013】

【発明の実施の形態】以下本発明の一実施形態の記録再生装置として現在最も一般的な光磁気記録媒体を用いたものを例示し、図1の記録再生回路の構成を示すブロック図、図2のネット上の文字情報データを記録する場合の動作フローチャートを用いて、プログラム内容とそのタイトルデータの記録に関する構成および動作を説明する。

【0014】この実施形態ではマスター記録媒体としてCDを用いこのプログラム内容をスレーブ記録媒体としてMDに記録する場合を例にして説明する。記録再生手段において、アナログオーディオ信号はアナログ音声入力端子1を介してA/D（Analog to Digital）変換器2に供給される。アナログ音声信号は、A/D変換器2でデジタル信号に変換され、音声圧縮デコーダ/エンコーダ回路5に供給される。またデジタル音声入力端子15から、デジタルオーディオ信号を直接的に音声圧縮デコーダ/エンコーダ回路5に供給することもできる。音声圧縮デコーダ/エンコーダ回路5により、デジタルオーディオ信号は圧縮され高能率符号化した音声圧縮信号に変換され、ディスク記録再生回路6に供給される。記録再生用MD7は、図示しないスピンドルモータにより回転されており、ディスク記録再生回路6は、図示しないピックアップと図示しない磁気ヘッドを用いて音声圧縮エンコーダ/デコーダ回路5から送られてくる音声圧縮信号や後述のシステム制御回路9から送られてくる演奏時間のデータを後述のバッファメモリ8に一時的に格納しながら録音再生用MD7に記録する。

【0015】次に記録再生手段においてMD7を再生する場合について説明する。記録再生用MD又は再生専用

MD 7は、図示しないスピンドルモータによって回転されており、ディスク記録再生回路6は、図示しないピックアップを用いて、ディスク内のTOC、U-TOC情報にある演奏時間や曲名や曲構成のデータと曲を読み出し、その中の一部をバッファメモリ8に記憶するとともに、音声信号を音声圧縮デコーダ/エンコーダ回路5で伸張処理し、元のデジタル音声信号に戻しD/A (Digital to Analog) 変換器4に出力し、D/A変換器4では、デジタル音声信号をアナログ音声信号に変換し、復調されたアナログ音声信号は、音声出力端子3に出力される。バッファメモリ8はディスク記録・再生時の音声圧縮信号やディスクを管理するTOC・U-TOC情報を一時記憶する。制御手段としてのシステム制御回路9は操作キー部11の入力によりディスク記録再生回路6や表示装置10その他装置全体を制御する。

【0016】再生手段において、MDへの録音時のマスターディスクであるコンパクトディスク（以下CD）16の動作については、上記MDの再生時と同様である。メモリ18にはシステム制御手段9によって、マスターディスクの各プログラムに一つずつ定められた国際標準レコーディングコード（ISRC）を再生する曲ごとに一時的に記憶していく。操作キー部11には録音再生用や再生専用のMD7の再生操作、記録操作、プログラム操作、タイトルの入力操作や再生専用CDの再生操作。また本発明である自動的にネットの情報をタイトル記録するための複数のキーを有する。表示装置10は、再生するプログラムの番号や演奏時間やプログラムタイトル等を表示するための表示部を有している。モデム12は、電話回線を通して、ネットワーク上のホームページにアクセスするためのデータ交換を行う通信手段である。文字情報メモリ14には、操作キー部11のキーによりインターネット上のタイトルをダウンロードするように選択し、通信手段であるモデム12によりネット上のデータベース13にアクセスし、メモリ18に格納された国際標準レコーディングコード（ISRC）データを元にMD7に記録したプログラムデータに対応して検出したタイトルデータを格納する。

【0017】以上のように構成された光磁気記録再生装置について、以下その動作を図2のフローチャートを用いて説明する。S1でスレーブ記録媒体であるMD7をディスク記録再生装置に、マスターディスク16をディスク再生装置にセットする。システム制御回路9は、S2において記録再生手段で記録媒体のTOC、U-TOCを読み取った後、バッファメモリ8に録音開始以前のMD7に既に収録されていた曲のトラック情報を記憶させる。

【0018】その後、S3でCD16から再生したプログラム内容をMD7へ録音開始させる。S4でマスターディスクのCD16から再生されるプログラムのISRCを抽出し、記録媒体であるMD7にプログラムが録音

される順にメモリ18に記憶させる。S5で録音終了を判別し、録音終了の場合は、S6においてインターネット上からタイトルデータをダウンロードするかどうかを操作キー部11で選択する。S6でダウンロードを選択すればS7で記録再生装置内のモデム12を介しネットワーク上の国際標準レコーディングコード（ISRC）順のタイトルデータベースが存在するホームページに自動的にアクセスさせる。操作キー部11または図示しないリモコンの操作によって、あらかじめ入力してある電話番号へ接続する。この番号は手動で入力しておいてもよく、またこの記録再生装置に放送受信機能がある場合、システムにあらかじめ各地の放送受信チャンネルデータとともにアクセスポイントを記憶しておき、機器設置の際にその地方の放送受信チャンネルを選択するときには放送チャンネルとセットで選択するようにしてもよい。システム制御回路9はS4で記憶されたメモリ18内の国際標準レコーディングコード（ISRC）をモデム12を介して送り出し、データベース13から自動的にそれに対応したタイトルデータを検出させる。S8で検出したタイトルデータを一度記録再生装置内の文字情報メモリ14に格納し、S9で記録媒体であるMD7のU-TOCのセクタ構成に変換して、S2で記憶したバッファメモリ8内の既収録曲データよりマスターディスク16のプログラムがMD7の何曲目から記録されたものか判別し、文字情報の記録開始曲を設定した後にU-TOCエリア21に記録する。記録終了するとS10でS2とS4で記憶されたメモリデータとメモリ内の文字情報を消去させる。

【0019】なお、ここではマスターディスク16としてCDを用いた例を示しているが、他の国際標準レコーディングコード（ISRC）をもつメディアでも同様である。そして記録媒体としてMDを用いた例を示しているが他のTOC情報を記録できる光記録媒体でも、光磁気記録媒体でも、あるいは磁気記録媒体でも同様に実施可能である。

【0020】また、外部データベース接続手段としてモデム12を例示したが、ISDN回線に接続する場合はターミナルアダプタがその役割を持つことになり、必要によってはローカルエリアネットワークを介した接続手段もあり得る。

【0021】また各メモリは別個のものとして示したが、1つのメモリを目的別に複数のアドレス範囲に分割して用いても差し支えない。

【0022】さらに、このタイトルデータは、上述のU-TOCエリアのセクタ1で示されるアスキーコードで表される英文字や、セクタ4で示されるISOまたはJIS文字コードで表される日本文字、その他各種の文字情報に対応するのはいうまでもない。

【0023】

【発明の効果】以上説明したように本発明の記録再生装

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置によれば、国際標準レコーディングコード（ISRC）を持つマスターディスクからプログラムをスレーブの記録媒体に記録する際、ネット上に存在するマスターディスクのプログラムタイトルを記録媒体に記録したプログラムに対応して、記録媒体に自動的に記録することができる。これにより今まで面倒であったプログラムの文字入力を完全に自動化できるという有利な効果が得られる。

【0024】また、これは、UTOC1又は4に対し、同様な効果が持てる。

【図面の簡単な説明】

【図1】本発明の実施形態1の記録再生装置の回路ブロック図

【図2】同じくそのネット上の文字情報データを記録する場合の動作フローチャート

【図3】記録再生用MDの記録エリアを概略的に示す図

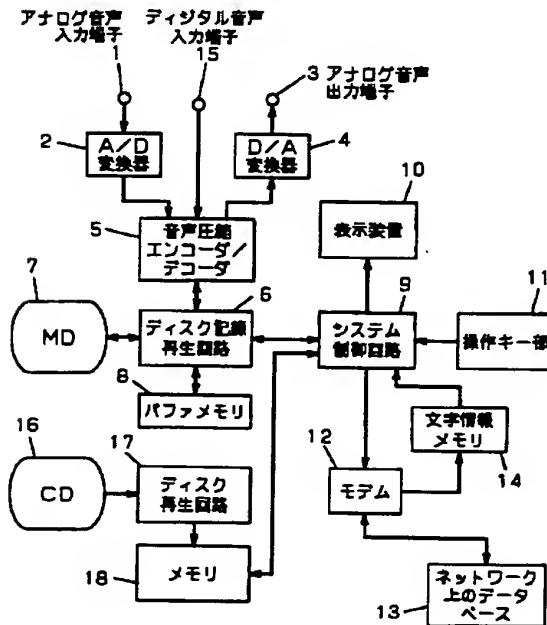
【図4】従来の記録再生装置におけるネットワーク上の文字情報を取り込む方法を示すブロック図

【符号の説明】

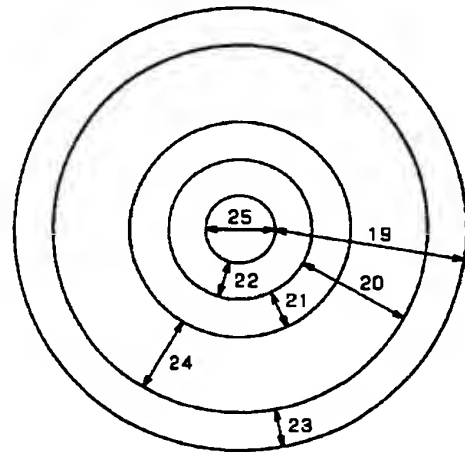
- 1 アナログ音声入力端子
- 2 A/D変換
- 3 アナログ音声出力端子

- * 4 D/A変換
- 5 音声圧縮エンコーダ/デコーダ
- 6 ディスク記録再生回路
- 7 MD
- 8 バッファメモリ
- 9 システム制御回路
- 10 表示装置
- 11 操作キー部
- 12 モデム
- 10 13 ネットワーク上のデータ
- 14 文字情報メモリ
- 15 デジタル入力端子
- 16 CD
- 17 ディスク再生回路
- 18 ISRCメモリ
- 19 インフォメーションエリア
- 20 レコーダブルエリア
- 21 U-TOCエリア
- 22 リードインエリア
- 20 23 リードアウトエリア
- 24 プログラムエリア
- * 25 クランピングプレートエリア

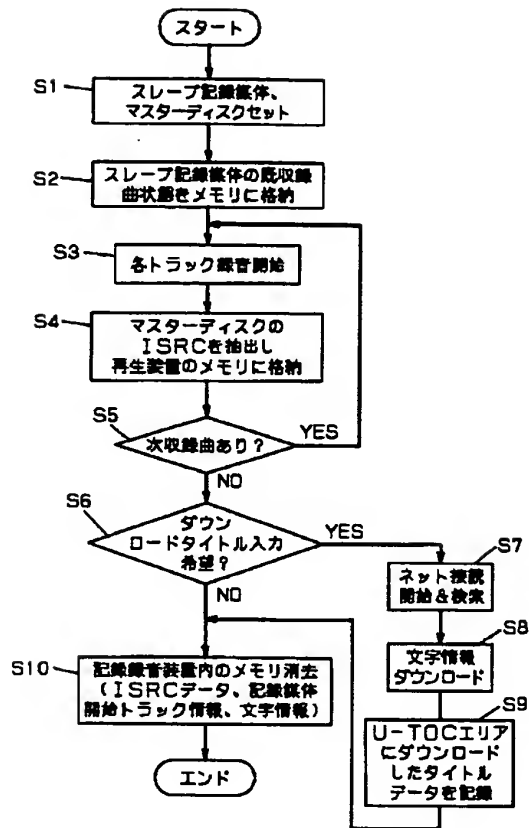
【図1】



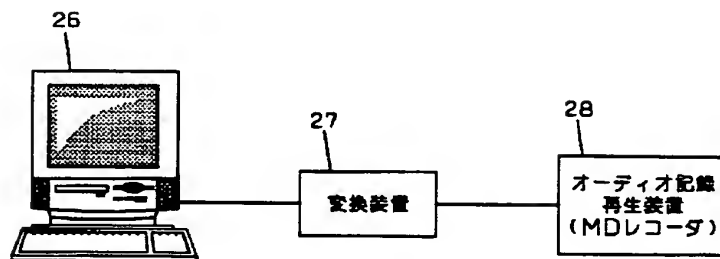
【図3】



【図2】



【図4】



フロントページの続き

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HC05 HC16
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CF11 CF13 DA08 DB03 DC06
DE04

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CLAIMS

[Claim(s)]

[Claim 1] A playback means to reproduce program data and International Standard Recording Code (ISRC) from a master record medium, The 1st memory which stores International Standard Recording Code reproduced from said master record medium, A record playback means to record title data and the program data reproduced from said master record medium on a slave record medium, The external database connecting means which connects with an external database and incorporates the title data corresponding to said International Standard Recording Code, The 2nd memory which stores the title data incorporated by said external database connecting means, Have a control means and said control means records the program data of said master record medium reproduced with said playback means on the slave record medium of said record playback means. And said International Standard Recording Code currently recorded on said master record medium is stored in said 1st memory. Download the title data corresponding to said International Standard Recording Code stored in said 1st memory from the external database connected by said external database connecting means, and it stores in said 2nd memory. The record regenerative apparatus characterized by making the title data stored in said 2nd memory after termination of the program data to said slave record medium record on said slave record medium.

[Claim 2] It has further the 3rd memory which stores the situation of the recorded data of a slave record medium. A control means reproduces the recorded data situation of a slave record medium with a record playback means, and stores it in said 3rd memory. It corresponds to International Standard Recording Code of a master record medium from an external database. The record regenerative apparatus according to claim 1 characterized by what the program data which newly recorded the downloaded title data from said master record medium with reference to the contents of said 3rd memory are made to correspond, and is recorded on said slave record medium.

[Claim 3] The record regenerative apparatus according to claim 1 or 2 characterized by eliminating the data stored in each memory after record termination of the program data to a slave record medium, and title data.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to what incorporates the title data of the sound data currently exhibited on the computer communication network based on International Standard Recording Code in a master disc in the memory in a disk record regenerative apparatus about a disk record regenerative apparatus, and can record a title on a slave disk automatically.

[0002]

[Description of the Prior Art] Now, many mini disc (Following MD and abbreviated name) systems which used the magneto-optic disk for the record medium as a record regenerative apparatus which performs musical record playback using an optical disk are used. In this MD system, the program which consists of music data by which compression coding was carried out by the ATRAC (trademark) (Adaptive Transform Acoustic Coding) method digitized, for example is recorded on a disk, and the management information of the recorded program is recorded on the inner circumference side of a disk.

[0003] Drawing 3 is drawing showing the record area of MD for record playback roughly. Let the field of the information film except the clamping plate area 25 of a disk be the information area 19. The most-inner-circumference side of the information area 19 is called lead-in groove area 22, the film only for playbacks is put here and information is beforehand recorded on it with the gestalt of a pit. The recorder bull area 20 where record film was put is established in the outside of the lead-in groove area 22, and the lead-out area 23 is further established in the outermost periphery of a disk. The U-TOC area 21 which records U-TOC (User-Table Of Contents) is arranged, and the information concerning each program currently recorded in the program area is recorded on the recorder bull area 20. Moreover, the program area 24 which records a program on the outside of the U-TOC area 21 of the recorder bull area 20 is arranged.

[0004] A program is managed per truck. For example, when a program is music data, one music can be recorded as one truck. By specifying a desired truck at the time of playback, the music recorded on the truck, i.e., music data, is reproduced.

[0005] The U-TOC area 21 consists of 32 sectors, among these sectors 1 and 4 correspond to Hollerith type voice different, respectively. For example, a sector 1 manages the alphabet with which it is expressed by the ASCII code, and manages the text in a kanji, a hiragana, etc. in which a sector 4 is expressed with the character code by ISO(International Organization for Standardization)-8859-1 or JIS (Japanese Industrial Standard). The area which manages matching with the truck information on a program and text is established in each sector, and the pointer of the text corresponding to a truck describes into it in this area.

[0006] The key or remote control commander by whom the input of text was prepared in this optical-magnetic disc equipment A means to operate the key prepared for (calling it remote control for short hereafter), The personal computer indicated by JP,12-11604,A as shown in drawing 4 (It is hereafter called a personal computer for short) 26 is used, the text on a network is omitted & copied, and incorporation of text is made by changing the data with an inverter 27 and transmitting to MD audio record regenerative apparatus 28.

[0007]

[Problem(s) to be Solved by the Invention] The case where text is inputted into above-mentioned MD is considered. For example, the title information on the music relevant to the music data recorded on each program is inputted and recorded. In an above-mentioned case, by the former, whenever it inputs program information, it is necessary to choose the data which input. In order to carry out more easily, it was indispensable to have had the environment where the data on a network are operated. Moreover, it is necessary to carry out the alphabetic character input of the keywords, such as for example, a singer name and a music name, and to search with a search engine the title currently exhibited on the network. Furthermore, the searched data needed to be cut & copied for every program. When such time and effort is taken into consideration, it turns out that a title input is a troublesome thing remarkable for a user. [0008] Then, it is made for the purpose of offering the means which can automate a title input completely by accessing automatically a homepage with the data relevant to the master disc which builds in the equipment which can access a computer network in a record regenerative apparatus in this invention, and is on a network, matching with the program recorded on the record medium of a slave, searching text automatically, and recording the text on a slave record medium.

[0009]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem the record regenerative apparatus of this invention A playback means to reproduce program data and International Standard Recording Code (ISRC) from a master record medium in claim 1, The 1st memory which stores International Standard Recording Code reproduced from said master record medium, A record playback means to record title data and the program data reproduced from said master record medium on a slave record medium, It is the configuration equipped with the external database connecting means which connects with an external database and incorporates the title data corresponding to said International Standard Recording Code, the 2nd memory which stores the title data incorporated by said external database connecting means, and a control means.

[0010] In this configuration, said control means records the program data of said master record medium reproduced with said playback means on the slave record medium of said record playback means. And said International Standard Recording Code currently recorded on said master record medium is stored in said 1st memory. Download the title data corresponding to said International Standard Recording Code stored in said 1st memory from the external database connected by said external database connecting means, and it stores in said 2nd memory. It acts so that the title data stored in said 2nd memory after termination of the program data to said slave record medium may be made to record on said slave record medium. The title data about the program which this records on a record medium can be completely inputted automatically without trouble.

[0011] Moreover, by considering as the configuration further equipped with the 3rd memory which stores the situation of the recorded data of a slave record medium in the configuration of claim 1 in claim 2 of this invention A control means reproduces the recorded data situation of a slave record medium with a record playback means, and stores it in said 3rd memory. It corresponds to International Standard Recording Code of a master record medium from an external database. It acts so that the program data which newly recorded the downloaded title data from said master record medium with reference to the contents of said 3rd memory may be made to correspond and it may record on said slave record medium. Also when record has already been carried out to the record playback medium, the contents of record and title data can be made to correspond surely.

[0012] Furthermore, by having eliminated the data stored in each memory in the configuration of claims 1 or 2 in claim 3 of this invention after record termination of the program data to a slave record medium, and title data, it acts so that unnecessary data may not occupy memory after record.

[0013]

[Embodiment of the Invention] The thing using the present most common magneto-optic-recording medium as a record regenerative apparatus of 1 operation gestalt of this invention is

illustrated below, and the configuration and actuation about record of the contents of a program and its title data are explained using the operation flow chart in the case of recording the block diagram showing the configuration of the record regenerative circuit of drawing 1, and the text data on the network of drawing 2.

[0014] The case where it records on MD by using these contents of a program as a slave record medium, using CD as a master record medium is made into an example, and this operation gestalt explains. In a record playback means, an analog audio signal is supplied to the A/D (Analog to Digital) converter 2 through the analog voice input terminal 1. An analog sound signal is changed into a digital signal with A/D converter 2, and is supplied to a speech compression decoder / encoder circuit 5. Moreover, from the digital voice input terminal 15, a digital audio signal can also be directly supplied to a speech compression decoder / encoder circuit 5. A digital audio signal is changed into the speech compression signal which compressed and carried out high efficiency coding by a speech compression decoder / encoder circuit 5, and is supplied to the disk record regenerative circuit 6. MD7 for record playback is rotating with the spindle motor which is not illustrated, and it records the disk record regenerative circuit 6 on MD7 for sound recording playback, storing temporarily in the below-mentioned buffer memory 8 the data of performance time amount sent from the speech compression signal sent from a speech compression encoder / decoder circuit 5 using the pickup which is not illustrated and the magnetic head which is not illustrated, or the below-mentioned system control circuit 9.

[0015] Next, the case where MD7 is reproduced in a record playback means is explained. Only for [MD / 7] MD for record playback or playbacks is rotated with the spindle motor which is not illustrated. The disk record regenerative circuit 6 While reading the performance time amount and the music name in TOC in a disk, and U-TOC information, and the data and the music of a music configuration using the pickup which is not illustrated and memorizing the part in it to buffer memory 8 Carry out elongation processing of the sound signal in a speech compression decoder / encoder circuit 5, return to the original digitized voice signal, and it outputs to the D/A (Digital to Analog) converter 4. In D/A converter 4, a digitized voice signal is changed into an analog sound signal, and the analog sound signal to which it restored is outputted to the voice output terminal 3. Buffer memory 8 stores temporarily the TOC-U-TOC information which manages the speech compression signal and disk at the time of disk record and playback. The system control circuit 9 as a control means controls the disk record regenerative circuit 6 and display 10 and the other whole equipments by the input of the actuation key section 11.

[0016] In a playback means, it is the same as that of the time of playback of Above MD about actuation of the compact disk (henceforth, CD) 16 which is a master disc at the time of the sound recording to MD. In memory 18, it memorizes temporarily for every music which reproduces International Standard Recording Code (ISRC) set to each one program of every of a master disc with the system control means 9. In the actuation key section 11, they are playback actuation of MD7 only the object for sound recording playback, and for playbacks, record actuation, program actuation, and the alter operation of a title and the playback actuation only for [CD] playbacks. Moreover, it has two or more keys for [which is this invention] carrying out title record of the information on a network automatically. The display 10 has the display for displaying the number and performance time amount of a program to reproduce, a program title, etc. A modem 12 is means of communications which performs data conversion for letting the telephone line pass and accessing the homepage on a network. It chooses so that the title on the Internet may be downloaded by the key of the actuation key section 11, and the database 13 on a network is accessed with the modem 12 which is means of communications, and the title data detected corresponding to the program data recorded on MD7 based on the International Standard Recording Code (ISRC) data stored in memory 18 are stored in the text memory 14.

[0017] About the magneto-optic-recording regenerative apparatus constituted as mentioned above, the actuation is explained using the flow chart of drawing 2 below. MD7 which is a slave record medium in S1 is set in a disk record regenerative apparatus, and a master disc 16 is set in a disk regenerative apparatus. The system control circuit 9 makes the truck information on the music already recorded on buffer memory 8 by MD7 before sound recording initiation memorize, after reading TOC of a record medium, and U-TOC with a record playback means in

S2.

[0018] Then, sound recording initiation of the contents of a program reproduced from CD16 by S3 is carried out to MD7. ISRC of the program reproduced from CD16 of a master disc by S4 is extracted, and the order in which a program is recorded by MD7 which is a record medium is made to memorize in memory 18. Sound recording termination is distinguished by S5, and, in sound recording termination, it chooses whether in S6, title data are downloaded from on the Internet in the actuation key section 11. If download is chosen by S6, the homepage in which the title database of the order of International Standard Recording Code (ISRC) on a network exists through the modem 12 in a record regenerative apparatus by S7 will be made to access automatically. It connects with the telephone number inputted beforehand by the actuation key section 11 or actuation of remote control which is not illustrated. This number memorizes the access point with the broadcast receiving channel data of every place beforehand to the system, and when choosing the broadcast receiving channel of that district in the case of device installation, you may make it choose it by the broadcast channel and the set, when you may input manually and a broadcast reception function is in this record regenerative apparatus. The system control circuit 9 sends out International Standard Recording Code (ISRC) in the memory 18 memorized by S4 through a modem 12, and makes the title data corresponding to it detect automatically from a database 13. The title data detected by S8 are once stored in the text memory 14 in a record regenerative apparatus, and it changes into the sector configuration of U-TOC of MD7 which is a record medium in S9, and after the program of a master disc 16 distinguishes in what was recorded from the how many music of MD7 and sets up the recording start music of text from the recorded music data in the buffer memory 8 memorized by S2, it records on the U-TOC area 21. When record termination is carried out, the text in the memory data memorized by S2 and S4 by S10 and memory is made to eliminate.

[0019] In addition, although the example which used CD as a master disc 16 here is shown, the same is said of media with other International Standard Recording Code (ISRC). And although the example using MD as a record medium is shown, it can carry out similarly by the optical recording medium which can record other TOC information, the magneto-optic-recording medium, or the magnetic-recording medium.

[0020] Moreover, although the modem 12 was illustrated as an external database connecting means, when connecting with an ISDN circuit, a terminal adopter will have the role and the connecting means which minded the Local Area Network depending on the need may also have it.

[0021] Moreover, although each memory was shown as a separate thing, even if it divides and uses one memory for two or more address ranges purpose-oriented, it does not interfere.

[0022] Furthermore, it cannot be overemphasized that this title data deals with the English character expressed with the ASCII code shown with the sector 1 of above-mentioned U-TOC area, the Japanese alphabetic character expressed with ISO or the JIS character code shown with a sector 4, and various kinds of other text.

[0023]

[Effect of the Invention] As explained above, in case a program is recorded on the record medium of a slave from a master disc with International Standard Recording Code (ISRC) according to the record regenerative apparatus of this invention, the program title of the master disc which exists on a network can be automatically recorded on a record medium corresponding to the program recorded on the record medium. The advantageous effectiveness that the alphabetic character input of the program which was troublesome thereby until now is completely automatable is acquired.

[0024] Moreover, this can have the same effectiveness to UTOC1 or 4.

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TECHNICAL FIELD

[Field of the Invention] This invention relates to what incorporates the title data of the sound data currently exhibited on the computer communication network based on International Standard Recording Code in a master disc in the memory in a disk record regenerative apparatus about a disk record regenerative apparatus, and can record a title on a slave disk automatically.
[0002]

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PRIOR ART

[Description of the Prior Art] Now, many mini disc (Following MD and abbreviated name) systems which used the magneto-optic disk for the record medium as a record regenerative apparatus which performs musical record playback using an optical disk are used. In this MD system, the program which consists of music data by which compression coding was carried out by the ATRAC (trademark) (Adaptive Transform Acoustic Coding) method digitized, for example is recorded on a disk, and the management information of the recorded program is recorded on the inner circumference side of a disk.

[0003] Drawing 3 is drawing showing the record area of MD for record playback roughly. Let the field of the information film except the clamping plate area 25 of a disk be the information area 19. The most-inner-circumference side of the information area 19 is called lead-in groove area 22, the film only for playbacks is put here and information is beforehand recorded on it with the gestalt of a pit. The recorder bull area 20 where record film was put is established in the outside of the lead-in groove area 22, and the lead-out area 23 is further established in the outermost periphery of a disk. The U-TOC area 21 which records U-TOC (User-Table Of Contents) is arranged, and the information concerning each program currently recorded in the program area is recorded on the recorder bull area 20. Moreover, the program area 24 which records a program on the outside of the U-TOC area 21 of the recorder bull area 20 is arranged.

[0004] A program is managed per truck. For example, when a program is music data, one music can be recorded as one truck. By specifying a desired truck at the time of playback, the music recorded on the truck, i.e., music data, is reproduced.

[0005] The U-TOC area 21 consists of 32 sectors, among these sectors 1 and 4 correspond to Hollerith type voice different, respectively. For example, a sector 1 manages the alphabet with which it is expressed by the ASCII code, and manages the text in a kanji, a hiragana, etc. in which a sector 4 is expressed with the character code by ISO(International Organization for Standardization)-8859-1 or JIS (Japanese Industrial Standard). The area which manages matching with the truck information on a program and text is established in each sector, and the pointer of the text corresponding to a truck describes into it in this area.

[0006] The key or remote control commander by whom the input of text was prepared in this optical-magnetic disc equipment A means to operate the key prepared for (calling it remote control for short hereafter), The personal computer indicated by JP,12-11604,A as shown in drawing 4 (It is hereafter called a personal computer for short) 26 is used, the text on a network is omitted & copied, and incorporation of text is made by changing the data with an inverter 27 and transmitting to MD audio record regenerative apparatus 28.

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EFFECT OF THE INVENTION

[Effect of the Invention] As explained above, in case a program is recorded on the record medium of a slave from a master disc with International Standard Recording Code (ISRC) according to the record regenerative apparatus of this invention, the program title of the master disc which exists on a network can be automatically recorded on a record medium corresponding to the program recorded on the record medium. The advantageous effectiveness that the alphabetic character input of the program which was troublesome thereby until now is completely automatable is acquired.

[0024] Moreover, this can have the same effectiveness to UTOC1 or 4.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] The case where text is inputted into above-mentioned MD is considered. For example, the title information on the music relevant to the music data recorded on each program is inputted and recorded. In an above-mentioned case, by the former, whenever it inputs program information, it is necessary to choose the data which input. In order to carry out more easily, it was indispensable to have had the environment where the data on a network are operated. Moreover, it is necessary to carry out the alphabetic character input of the keywords, such as for example, a singer name and a music name, and to search with a search engine the title currently exhibited on the network. Furthermore, the searched data needed to be cut & copied for every program. When such time and effort is taken into consideration, it turns out that a title input is a troublesome thing remarkable for a user. [0008] Then, it is made for the purpose of offering the means which can automate a title input completely by accessing automatically a homepage with the data relevant to the master disc which builds in the equipment which can access a computer network in a record regenerative apparatus in this invention, and is on a network, matching with the program recorded on the record medium of a slave, searching text automatically, and recording the text on a slave record medium.

[Translation done.]

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MEANS

[Means for Solving the Problem] In order to solve the above-mentioned technical problem the record regenerative apparatus of this invention A playback means to reproduce program data and International Standard Recording Code (ISRC) from a master record medium in claim 1, The 1st memory which stores International Standard Recording Code reproduced from said master record medium, A record playback means to record title data and the program data reproduced from said master record medium on a slave record medium, It is the configuration equipped with the external database connecting means which connects with an external database and incorporates the title data corresponding to said International Standard Recording Code, the 2nd memory which stores the title data incorporated by said external database connecting means, and a control means.

[0010] In this configuration, said control means records the program data of said master record medium reproduced with said playback means on the slave record medium of said record playback means. And said International Standard Recording Code currently recorded on said master record medium is stored in said 1st memory. Download the title data corresponding to said International Standard Recording Code stored in said 1st memory from the external database connected by said external database connecting means, and it stores in said 2nd memory. It acts so that the title data stored in said 2nd memory after termination of the program data to said slave record medium may be made to record on said slave record medium. The title data about the program which this records on a record medium can be completely inputted automatically without trouble.

[0011] Moreover, by considering as the configuration further equipped with the 3rd memory which stores the situation of the recorded data of a slave record medium in the configuration of claim 1 in claim 2 of this invention A control means reproduces the recorded data situation of a slave record medium with a record playback means, and stores it in said 3rd memory. It corresponds to International Standard Recording Code of a master record medium from an external database. It acts so that the program data which newly recorded the downloaded title data from said master record medium with reference to the contents of said 3rd memory may be made to correspond and it may record on said slave record medium. Also when record has already been carried out to the record playback medium, the contents of record and title data can be made to correspond surely.

[0012] Furthermore, by having eliminated the data stored in each memory in the configuration of claims 1 or 2 in claim 3 of this invention after record termination of the program data to a slave record medium, and title data, it acts so that unnecessary data may not occupy memory after record.

[0013]

[Embodiment of the Invention] The thing using the present most common magneto-optic-recording medium as a record regenerative apparatus of 1 operation gestalt of this invention is illustrated below , and the configuration and actuation about record of the contents of a program and its title data are explained using the operation flow chart in the case of recording the block diagram showing the configuration of the record regenerative circuit of drawing 1 , and the text data on the network of drawing 2 .

[0014] The case where it records on MD by using these contents of a program as a slave record medium, using CD as a master record medium is made into an example, and this operation gestalt explains. In a record playback means, an analog audio signal is supplied to the A/D (Analog to Digital) converter 2 through the analog voice input terminal 1. An analog sound signal is changed into a digital signal with A/D converter 2, and is supplied to a speech compression decoder / encoder circuit 5. Moreover, from the digital voice input terminal 15, a digital audio signal can also be directly supplied to a speech compression decoder / encoder circuit 5. A digital audio signal is changed into the speech compression signal which compressed and carried out high efficiency coding by a speech compression decoder / encoder circuit 5, and is supplied to the disk record regenerative circuit 6. MD7 for record playback is rotating with the spindle motor which is not illustrated, and it records the disk record regenerative circuit 6 on MD7 for sound recording playback, storing temporarily in the below-mentioned buffer memory 8 the data of performance time amount sent from the speech compression signal sent from a speech compression encoder / decoder circuit 5 using the pickup which is not illustrated and the magnetic head which is not illustrated, or the below-mentioned system control circuit 9.

[0015] Next, the case where MD7 is reproduced in a record playback means is explained. Only for [MD / 7] MD for record playback or playbacks is rotated with the spindle motor which is not illustrated. The disk record regenerative circuit 6 While reading the performance time amount and the music name in TOC in a disk, and U-TOC information, and the data and the music of a music configuration using the pickup which is not illustrated and memorizing the part in it to buffer memory 8 Carry out elongation processing of the sound signal in a speech compression decoder / encoder circuit 5, return to the original digitized voice signal, and it outputs to the D/A (Digital to Analog) converter 4. In D/A converter 4, a digitized voice signal is changed into an analog sound signal, and the analog sound signal to which it restored is outputted to the voice output terminal 3. Buffer memory 8 stores temporarily the TOC-U-TOC information which manages the speech compression signal and disk at the time of disk record and playback. The system control circuit 9 as a control means controls the disk record regenerative circuit 6 and display 10 and the other whole equipments by the input of the actuation key section 11.

[0016] In a playback means, it is the same as that of the time of playback of Above MD about actuation of the compact disk (henceforth, CD) 16 which is a master disc at the time of the sound recording to MD. In memory 18, it memorizes temporarily for every music which reproduces International Standard Recording Code (ISRC) set to each one program of every of a master disc with the system control means 9. In the actuation key section 11, they are playback actuation of MD7 only the object for sound recording playback, and for playbacks, record actuation, program actuation, and the alter operation of a title and the playback actuation only for [CD] playbacks. Moreover, it has two or more keys for [which is this invention] carrying out title record of the information on a network automatically. The display 10 has the display for displaying the number and performance time amount of a program to reproduce, a program title, etc. A modem 12 is means of communications which performs data conversion for letting the telephone line pass and accessing the homepage on a network. It chooses so that the title on the Internet may be downloaded by the key of the actuation key section 11, and the database 13 on a network is accessed with the modem 12 which is means of communications, and the title data detected corresponding to the program data recorded on MD7 based on the International Standard Recording Code (ISRC) data stored in memory 18 are stored in the text memory 14.

[0017] About the magneto-optic-recording regenerative apparatus constituted as mentioned above, the actuation is explained using the flow chart of drawing 2 below. MD7 which is a slave record medium in S1 is set in a disk record regenerative apparatus, and a master disc 16 is set in a disk regenerative apparatus. The system control circuit 9 makes the truck information on the music already recorded on buffer memory 8 by MD7 before sound recording initiation memorize, after reading TOC of a record medium, and U-TOC with a record playback means in S2.

[0018] Then, sound recording initiation of the contents of a program reproduced from CD16 by S3 is carried out to MD7. ISRC of the program reproduced from CD16 of a master disc by S4 is extracted, and the order in which a program is recorded by MD7 which is a record medium is

made to memorize in memory 18. Sound recording termination is distinguished by S5, and, in sound recording termination, it chooses whether in S6, title data are downloaded from on the Internet in the actuation key section 11. If download is chosen by S6, the homepage in which the title database of the order of International Standard Recording Code (ISRC) on a network exists through the modem 12 in a record regenerative apparatus by S7 will be made to access automatically. It connects with the telephone number inputted beforehand by the actuation key section 11 or actuation of remote control which is not illustrated. This number memorizes the access point with the broadcast receiving channel data of every place beforehand to the system, and when choosing the broadcast receiving channel of that district in the case of device installation, you may make it choose it by the broadcast channel and the set, when you may input manually and a broadcast reception function is in this record regenerative apparatus. The system control circuit 9 sends out International Standard Recording Code (ISRC) in the memory 18 memorized by S4 through a modem 12, and makes the title data corresponding to it detect automatically from a database 13. The title data detected by S8 are once stored in the text memory 14 in a record regenerative apparatus, and it changes into the sector configuration of U-TOC of MD7 which is a record medium in S9, and after the program of a master disc 16 distinguishes in what was recorded from the how many music of MD7 and sets up the recording start music of text from the recorded music data in the buffer memory 8 memorized by S2, it records on the U-TOC area 21. When record termination is carried out, the text in the memory data memorized by S2 and S4 by S10 and memory is made to eliminate.

[0019] In addition, although the example which used CD as a master disc 16 here is shown, the same is said of media with other International Standard Recording Code (ISRC). And although the example using MD as a record medium is shown, it can carry out similarly by the optical recording medium which can record other TOC information, the magneto-optic-recording medium, or the magnetic-recording medium.

[0020] Moreover, although the modem 12 was illustrated as an external database connecting means, when connecting with an ISDN circuit, a terminal adapter will have the role and the connecting means which minded the Local Area Network depending on the need may also have it.

[0021] Moreover, although each memory was shown as a separate thing, even if it divides and uses one memory for two or more address ranges purpose-oriented, it does not interfere.

[0022] Furthermore, it cannot be overemphasized that this title data deals with the English character expressed with the ASCII code shown with the sector 1 of above-mentioned U-TOC area, the Japanese alphabetic character expressed with ISO or the JIS character code shown with a sector 4, and various kinds of other text.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The circuit block diagram of the record regenerative apparatus of the operation gestalt 1 of this invention

[Drawing 2] The operation flow chart in the case of similarly recording the text data on the network

[Drawing 3] Drawing showing the record area of MD for record playback roughly

[Drawing 4] The block diagram showing how to incorporate the text on the network in the conventional record regenerative apparatus

[Description of Notations]

- 1 Analog Voice Input Terminal
- 2 A/D Conversion
- 3 Analog Voice Output Terminal
- 4 D/A Conversion
- 5 Speech Compression Encoder / Decoder
- 6 Disk Record Regenerative Circuit
- 7 MD
- 8 Buffer Memory
- 9 System Control Circuit
- 10 Display
- 11 Actuation Key Section
- 12 Modem
- 13 Data on Network
- 14 Text Memory
- 15 DITARU Input Terminal
- 16 CD
- 17 Disk Regenerative Circuit
- 18 ISRC Memory
- 19 Information Area
- 20 Recorder Bull Area
- 21 U-TOC Area
- 22 Lead-in Groove Area
- 23 Lead-out Area
- 24 Program Area
- 25 Clamping Plate Area

[Translation done.]

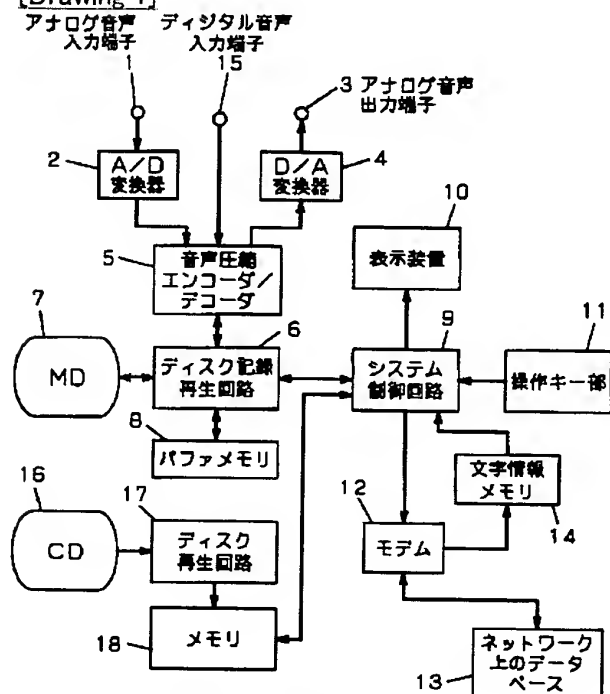
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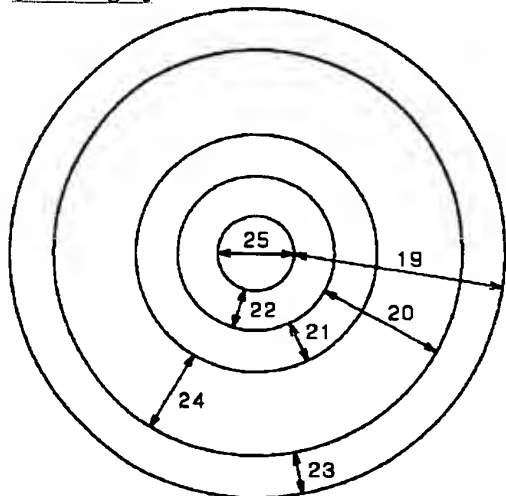
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DRAWINGS

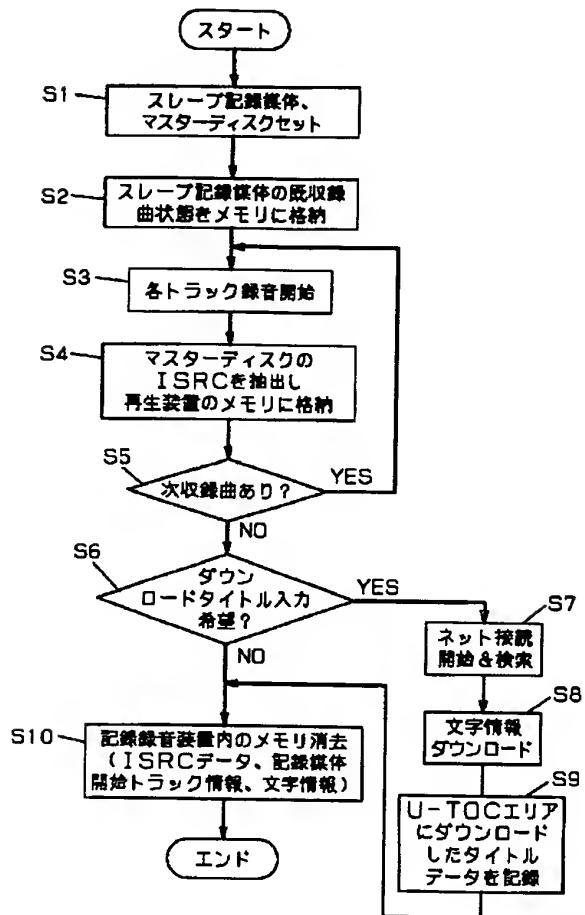
[Drawing 1]



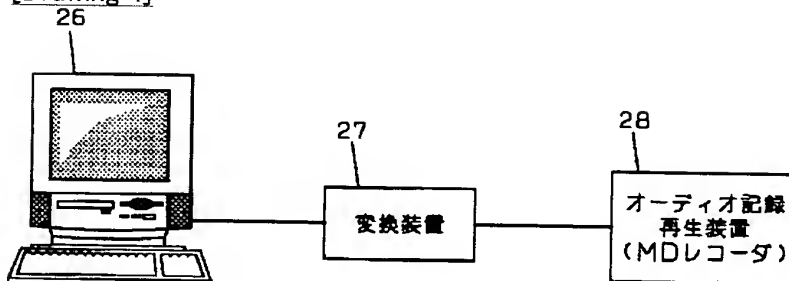
[Drawing 3]



[Drawing 2]



[Drawing 4]



[Translation done.]